What is claimed is:

1. A test and measurement instrument for multi-channel mask testing, comprising:

a group of M signal input terminals for receiving M signals from a circuit under test;

an acquisition system coupled to said M signal input terminals for acquiring samples of a waveform at each of said M signal input terminals;

a controller for generating mask pixel data defining a mask;

a memory for storing said waveform samples and said mask pixel data, said mask pixel data including an identification code;

comparison circuitry for reading a memory location, and determining if any acquired waveform sample of said signal from each of said M signal input terminals is to be written into a memory location currently storing a mask pixel, causing a mask violation; and

display circuitry for simultaneously displaying a representation of said mask and all of said waveforms from said M signal input terminals.

2. The test and measurement instrument of claim 1 wherein,

said comparison circuitry is a rasterizer;

said memory is a raster memory;

said comparison is performed by said rasterizer examining pixel data of said raster memory for said identification code as said waveform samples are composited into said raster memory; and

said comparison being performed sequentially on a waveform basis.

3. The test and measurement instrument of claim 2, wherein

Each of said waveforms is displayed in a different one of M colors and said telecom mask is displayed in an M+1 color.

4. The test and measurement instrument of claim 3, wherein

in response to a determination of a mask violation, said rasterizer increases an intensity value of said waveform sample violating said mask prior to compositing said sample into said raster memory.

5. The test and measurement instrument of claim 1 wherein said controller generating mask pixels is a microprocessor.

6. The test and measurement system of claim 1 wherein said controller generating mask pixels is a dedicated ASIC.

7. The test and measurement instrument of claim 1 wherein:

said test and measurement instrument is a digital oscilloscope.

8. A test and measurement system for multi-channel mask testing, comprising:

a multiplexer having N input channels and M output channels, where N is greater than M , and M is greater than one, for selecting ones of said N-channels in groups of M-channels at a time in response to a first control signal;

each of said N input channels being coupled to receive a signal from a respective one of N output channels of a circuit under test;

a test and measurement instrument operating in response to a second control signal, and including:

a group of M signal input terminals, each of said M signal input terminals being coupled to a respective one of said M signal output channels;

an acquisition system coupled to said M signal input terminals for acquiring samples of a waveform at each of said M signal input terminals;

a controller for generating mask pixel data defining a mask;

a memory for storing said waveform samples and said mask pixel data, said mask pixel data including an identification code;

comparison circuitry for reading a memory location, and determining if any acquired waveform sample of said signal from each of said M signal input terminals is to be written into a memory location currently storing a mask pixel, causing a mask violation; and

display circuitry for simultaneously displaying a representation of said mask and all of said waveforms from said M signal input terminals; and

a controller coupled to said multiplexer and to said test and measurement instrument for generating said first and second control signals.

9. The test and measurement system of claim 8 wherein,

said comparison circuitry is a rasterizer;

said memory is a raster memory;

said comparison is performed by said rasterizer examining pixel data of said raster memory for said identification code as said waveform samples are composited into said raster memory; and

said comparison being performed sequentially on a waveform basis.

10. The test and measurement system of claim 9, wherein

each of said waveforms is displayed in a different one of M colors and said telecom mask is displayed in an M+1 color.

11. The test and measurement system of claim 10, wherein

in response to a determination of a mask violation, said rasterizer increases an intensity value of said waveform sample violating said mask prior to compositing said sample into said raster memory.

12. The test and measurement system of claim 8 wherein said controller generating mask pixels is a microprocessor.

13. The test and measurement system of claim 8 wherein said controller generating mask pixels is a dedicated ASIC.

14. The test and measurement system of claim 8 wherein:

said test and measurement instrument is a digital oscilloscope.

15. A method for performing multi-channel mask testing in test and measurement system including a test and measurement instrument having mask testing capability, comprising the steps of:

selecting M channels at a time from a group of N channels;

acquiring samples of waveforms at M input terminals coupled to said M channels;

generating mask pixel data defining a mask;

storing said waveform samples and said mask pixel data in a memory, said mask pixel data including an identification code;

comparing mask pixel data and waveform sample data by reading a memory location, and determining if a waveform sample of said acquired waveform samples is to be written into a memory location currently storing a mask pixel, causing a mask violation;

compositing said waveform samples into a raster memory;

displaying simultaneously said mask and said M waveforms on a display screen.

16. The method of claim 15 wherein,

said comparing step is performed by a rasterizer examining pixel data of said raster memory for said identification code as said waveform samples are composited into said raster memory; and

said comparison of said samples is made on a waveform basis.

17. The method of claim 15, wherein said displaying step includes:

displaying each of said waveforms in one of M different colors and displaying said mask in an M+1 color.

18. The method of claim 16, further including the step of:

increasing an intensity value of a sample determined to cause a mask violation before compositing said sample in said raster memory.